conference on unemployment. (New York: American Association for Labor Legislation. 1914. Pp. 210. $1.)

The workmen's compensation law. (New York: Dwight & Hilles. 1914.)

Enquête sur le travail à domicile dans l'industrie de la chassure. (Paris: Imprimerie Nationale. 1914. Pp. x, 553.)

Gebiete und Methoden der amtlichen Arbeitsstatistik in den wichtigsten Industriestaaten. Beiträge zur Arbeiterstatistik, 12. (Berlin: Heymans. 1913.)

Money, Prices, Credit, and Banking

Money and Prices. A Statistical Study of Price Movements. By JAMES DYSART MAGEE. (Chicago: University of Chicago Press. 1913. Pp. 89.)

In the *Quarterly Publications of the American Statistical Association* for June, 1912, Dr. Magee suggested a simple method of measuring the degree of correspondence between two series of index numbers. Fluctuations in the same direction he entered as +1, fluctuations in opposite directions as —1, and cases in which one series changes while the other remains constant as 0. The algebraic sum of these entries divided by their number he held to give the degree of correspondence.

In the present investigation, Dr. Magee applies his method to determine the causal relations between changes in money or bank deposits and changes in price index numbers of bonds, stocks, farm products, and commodities at wholesale. Whenever it is possible he deals with weekly and monthly as well as with yearly data. The highest degree of correspondence which he finds is +.684 between the yearly fluctuations of stock prices and of net deposits in the New York Clearing-House banks in the preceding year. Next comes +.611 between the movements of bond prices and net deposits for the same year. When he compares wholesale-price index numbers with the quantity of money, the highest degree of correspondence turns out to be +.279 between a series of index numbers for 1867-1911 and per capita circulation for the previous year. In general, the yearly figures show closer correspondence than the monthly or weekly figures. "The causal influence runs from money in circulation or in banks to prices more frequently than the reverse. On the other hand, the causal influence runs from prices to bank deposits more frequently than the reverse" (p. 54).

Especial stress is laid by Dr. Magee upon his test of the sta-

tistical proofs of the quantity theory by Professors Kemmerer and Fisher. Comparing the index numbers of prices given by their equations of exchange and the corresponding index numbers as directly determined, Dr. Magee finds a correspondence of +.48 in Kemmerer's series for 1879-1908, and of +.31 in Fisher's series for 1896-1909.

Of course this method of determining the agreement between two series is extremely rough, since attention is given only to the direction of the fluctuations. In dealing with Fisher's and Kemmerer's figures, accordingly, Dr. Magee refines upon his procedure by taking into account not only the direction but also the degree of change from one year to the next. To this end he computes the percentage of increase or decrease between the successive numbers in each of the series to be compared, divides the smaller by the larger, and strikes the arithmetic mean of the quotients. That this method gives erratic and therefore unreliable results has been demonstrated by Professor W. M. Persons in the March issue of the *Quarterly Publications of the American Statistical Association.* Hence little importance attaches to the final unfavorable results which Dr. Magee obtains from his testing of Fisher's and Kemmerer's work. Better methods of measuring correlation, even where the time element is important, have been devised and described in textbooks like Yule's.

It is unfortunate that such an energetic and capable young investigator as Dr. Magee was not given more expert technical advice by those who supervised his dissertation.

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Gold, Prices and Wages. By JOHN A. HOBSON. (London: Methuen and Company; New York: George H. Doran Company. 1913. Pp. xi, 181. $1.25.)

Essentially, this is an examination of the quantity theory as set forth in various recent works—in particular Fisher's *Purchasing Power of Money.* Fisher's use of the equation of exchange (MV+M′V′=PT) is criticised at the point which many readers have felt to be a questionable link in the chain of reasoning—namely, that increases of money (M) bring about proportionate increases in bank deposits (M′).

Hobson sees clearly that if Fisher's argument fails at this point his contention as to the effect of gold output on prices loses most